

CLAIMS

WHAT IS CLAIMED IS:

- 5 1. A simplified airbag cushion for use in a vehicle restraint system, the cushion comprising:
- 10 a first body panel section and a second body panel section, wherein at least one of said first and second body panel sections comprises a plurality of panels adapted to be joined together by substantially straight seams,
- 15 a substantially straight upper boundary edge having a first terminal end and a second terminal end,
- a first substantially straight lateral boundary edge,
- a second substantially straight lateral boundary edge,
- 20 a first substantially straight intermediate boundary edge intersecting and extending between said first lateral boundary edge and said first terminal end of said upper boundary edge, and

a second substantially straight intermediate boundary edge
extending between said second lateral boundary edge and a
said second terminal end of said upper boundary edge,

5 a third panel section enclosed by a first substantially straight
boundary edge, a second substantially straight boundary edge,
a third substantially straight boundary edge, and a fourth
substantially straight boundary edge;

10 said plurality of panels of at least one of said first and second body
panel sections being seamed together along abutting edges thereof to
form at least one of said first and second body panel sections,

15 said first and second body panel sections being seamed together
along corresponding lateral boundary edges and said third panel
section being seamed around its entire perimeter to said first and
second body panel sections by a series of substantially straight seams
such that said first and second body panel sections are in surrounding
and enclosing relation to said center panel thereby forming an
20 inflatable structure.

2. The cushion as recited in claim 1, wherein said third panel section is a center
panel and is substantially square.

3. The cushion as in claim 1, wherein said third panel section is a center panel and is of an elongated rectangular geometry wherein said geometry has a length dimension greater than its width dimension.

5 4. The cushion as recited in claim 3, wherein said length dimension is at least 30 percent greater than said width dimension.

10 5. The cushion as recited in claim 4, wherein said length dimension is at least twice as great as said width dimension.

15 6. The cushion as recited in claim 1, wherein said first, second, and third panel sections each comprise a woven fabric.

20 7. The cushion as recited in claim 6, wherein the woven fabric which comprises said first body panel section exhibits permeability characteristics which differ from the fabric which comprises said third panel section.

25 8. The cushion as recited in claim 6, wherein the woven fabric which comprises said first body panel section is an uncoated fabric and the woven fabric which comprises said third panel section is a coated fabric.

30 9. The cushion as recited in Claim 8, wherein said coated fabric is coated with a disperse polymer, such as polyamide or urethane having a dry add on weight of not greater than about 0.4 ounces per square yard.

10. The cushion as recited in claim 6, wherein the fabric which comprises at least one of said first body panel section, said second body panel section and said third panel section is woven from a plurality multifilament synthetic yarns
5 wherein the filaments forming said synthetic yarns are characterized by a linear density of about 4 denier per filament or less.

11. The cushion as recited in claim 10, wherein said multifilament synthetic yarns are characterized by a yarn linear density of about 840 denier or less.

12. The cushion as recited in claim 6, wherein the woven fabric which comprises said first body panel section is uncoated, the woven fabric which comprises said second body panel section is uncoated, and the woven fabric comprises said third panel section is uncoated.

13. The cushion as recited in claim 6, wherein the woven fabric which comprises said third panel section is characterized by an air permeability of about 1-3 cubic feet per minute per square foot of fabric at a differential pressure of 0.5 inches of water.

14. The cushion as recited in claim 1, wherein said first and second intermediate boundary edges intersect said upper boundary edge at an angle of about 90 degrees.

15. The cushion as recited in claim 1, wherein said first and second intermediate boundary edges intersect said upper boundary edge at an angel greater than 90 degrees.

5 16. The cushion as recited in claim 1, wherein each of said first and second body panel sections are made up of a plurality of panels.

17. In a vehicle restraint system, the improvement comprising the cushion of claim 1.

18. In an airbag module, the improvement comprising the cushion of claim 1.

19. An airbag cushion formed of panel sections as shown in at least one of FIGS. 9A-19D of the drawings.

20. The airbag cushion as recited in claim 19 having at least 3 panel sections and wherein at least one panel section has at least two panels.

21. A simplified airbag cushion for use in a vehicle restraint system, the cushion comprising:

at least two body panel sections and a center panel section, wherein at least one of said body panel sections comprises a plurality of panels, said body panel sections adapted to be joined together to form a body

structure that is adapted to be further joined to said center panel
section to form a three dimensional structure.

22. The cushion of claim 21, wherein said three-dimensional structure includes a
5 loop pocket for inflator attachment.

23. The cushion of claim 21, wherein said structure is adapted to receive plastic
rods or metal rings.

24. The cushion of claim 21, wherein said structure includes a flat mouth for
inflator attachment.

25. The cushion of claim 21, wherein said panel sections are joined together by a
10 joining seam wherein at least 70% of the joining seam is substantially
straight.

26. The cushion of claim 21, wherein said panel sections are joined together by a
15 joining seam wherein at least 60% of the joining seam is substantially
straight.

27. The cushion of claim 21, wherein said panel sections are joined together by a
joining seam wherein at least 50% of the joining seam is substantially
straight.

28. A simplified airbag cushion for use in a vehicle restraint system, the cushion
20 comprising:

at least two body panel sections and a center panel section, wherein
the area of at least one body panel section is larger than the area of
the other body panel section, wherein the body panel sections are
adapted to be joined together to form a body structure that is adapted

to be further joined to said center panel section to form a three dimensional structure.

29. The cushion of claim 25, wherein said structure includes a loop pocket for inflator attachment.
30. The cushion of claim 25, wherein said structure is adapted to receive plastic rods or metal rings.
31. The cushion of claim 25, wherein said structure includes a flat mouth for inflator attachment.
32. The cushion of claim 25, wherein at least 70% of the perimeter of said panel sections are joined by substantially straight seams.
33. The cushion of claim 25, wherein at least 60% of the perimeter of said panel sections are joined by substantially straight seams.
34. The cushion of claim 25, wherein at least 50% of the perimeter of said panel sections are joined by substantially straight seams.
35. A simplified airbag cushion for use in a vehicle restraint system, the cushion comprising:
- at least two body panel sections and a center panel section, wherein at least one body panel section comprises the top or bottom portions of the airbag, wherein at least one of the top or the bottom portions of the airbag comprises at least one side portion of the airbag integrated in such a way that the body panel sections are adapted to be joined together in order to form a body structure that is adapted to be attached to said center panel section to form a three dimensional structure.

36. The cushion of claim 35, wherein said structure includes a loop pocket for inflator attachment.
37. The cushion of claim 35, wherein said structure is adapted to receive plastic rods or metal rings.
- 5 38. The cushion of claim 35, wherein said structure includes a flat mouth for inflator attachment.
39. A cushion of claim 35, wherein at least about 70% of the seams joining said sections are substantially straight.
40. The cushion of claim 35, wherein at least about 60% of the seams joining said sections are substantially straight.
41. The cushion of claim 35, wherein at least about 50% of the seams joining said sections are substantially straight.
42. An airbag comprising a face member and a body member having at least first and second body segments, wherein said first body segment mates with at least 50% of a perimeter of said face member and said second body segment mates with at most 50% of the perimeter of said face member.
43. The airbag of claim 42, wherein said first body segment mates with over 50% of the perimeter of said face member and said second body segment mates with less than 50% of the perimeter of said face member.
- 20 44. The airbag of claim 42, wherein said airbag has a conical body.
45. The airbag of claim 42, wherein said airbag has a pyramidal body.
46. The airbag of claim 42, wherein said airbag has a prismatic body.
47. An airbag comprising a face member and a body member having at least first and second body segments, wherein said first body segment mates with over

50% of a perimeter of said face member and said second body segment
mates with less than 50% of the perimeter of said face member.

48. The airbag of claim 47, wherein said airbag has a conical body.

49. The airbag of claim 47, wherein said airbag has a pyramidal body.

5 50. The airbag of claim 47, wherein said airbag has a prismatic body.

51. A multiple panel airbag, comprising at least one face panel, and at least one
body panel, and wherein said airbag has at least one of a conical, pyramidal,
and prismatic body.

52. The airbag of claim 51, wherein said airbag includes at least two body panels.

10 53. The airbag of claim 52, wherein each of said body panels are substantially
identical.

54. The airbag of claim 52, wherein each of said body panels are dissimilar.

55. The airbag of claim 52, wherein one of said body panels defines at least the
top of the body.

15 56. The airbag of claim 52, wherein one of said body panels defines the top and
at least one side of the body.

57. The airbag of claim 52, wherein one of said body panels defines the top and
both sides of the body.

58. The airbag of claim 52, wherein one of said body panels defines at least the
20 bottom of the body.

59. The airbag of claim 52, wherein one of said body panels defines at least the
bottom and one side of the body.

60. The airbag of claim 52, wherein one of said body panels defines the bottom
and both sides of the body.

61. An airbag comprising a face member having at least first and second body segments and a body member having at least first and second body segments, wherein said first body segment mates with at least 50% of a perimeter of said face member and said second body segment mates with at most 50% of the perimeter of said face member.
62. The airbag of claim 61, wherein one of said body panels defines at least part of the top of the body.
63. The airbag of claim 61, wherein one of said body panels defines at least part of the top and at least part of one side of the body.
64. The airbag of claim 61, wherein one of said body panels defines at least part of the top and at least part of both sides of the body.
65. The airbag of claim 61, wherein one of said body panels defines at least part of the bottom of the body.
66. The airbag of claim 61, wherein one of said body panels defines at least part of the bottom and at least part of one side of the body.
67. The airbag of claim 61, wherein one of said body panels defines at least part of the bottom and at least part of both sides of the body.